

**TEPE PAHLAVAN:
A NEOLITHIC-CHALCOLITHIC SITE
IN THE JAJARM PLAIN, NORTH-EASTERN IRAN**

BY

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Abstract: The Neolithisation of north-eastern Iran is an important topic for our understanding of the development, transmission and spread of technological and socio-economical innovations. Archaeological fieldwork in the south of Turkmenistan and north of Iranian Khorassan has already shown the richness of prehistoric cultures in the region. However, our understanding of the spread of Neolithic practices across north-eastern Iran, especially the northern fringe of the great central desert, is relatively limited. This paper focuses on a region of north-eastern Iran that has so far not been explored archaeologically and introduces a large, Neolithic-Chalcolithic craft production site, namely Tepe Pahlavan.

Keywords: Iran, Khorassan, Jajarm Plain, Tepe Pahlavan, Neolithic, Chalcolithic

Introduction

Due to the lack of fieldwork in northern Khorassan compared to the better-known archaeology of central and western Iran and the neighbouring region of Central Asia, our archaeological understanding of the area is rather defective and fragmentary. Beyond the modern borders of Iranian Khorassan, we have useful information about the development of cultures in Central Asia and south Turkmenistan thanks to the works of Victor Sarianidi, Philip Kohl and other ongoing projects, such as the Ulug Depe excavations.

In spite of the fact that the region of north Khorassan has frequently been referred to as being a contact area and a crucial point for understanding the interaction between the ancient civilizations, yet it remained a “blank spot” on the archaeological map of Iran. Archaeological research has been concentrated on the western and south-western regions of Iran. However, scanty archaeological surveys have shown the richness of prehistoric occupations of the north Khorassan region. Surveys and soundings by an Italian team of Turin University in the upper Atrak valley (Ricciardi

1980) and a reconnaissance survey in the Darreh Gaz plain (Kohl and Heskell 1980), showing a long cultural sequence from prehistoric times down to the Islamic era, have established indisputable links connecting the intermountain valleys of north Khorassan with south Turkmenistan from the Chalcolithic period through the early Iron Age. More recent archaeological publications (Dyson 2002; Labbaf 2003) demonstrate the presence of Central Asian type of material in the region as well. These small activities have unfortunately been concentrated in the eastern half of the region, whereas the western half is virtually unknown archaeologically. Systematic archaeological surveys need to be done on the fringe desert and along the nearby Kal-e Shur River to see if the area is associated with the cultural sequence of Central Asia or with the Central Plateau of Iran and the Gurgan Plain. At present, we have a limited understanding of the spread of Neolithic practices across north-eastern Iran and this paper introduces new prehistoric sites in the region with a focus on Tepe Pahlavan, on the extreme west of Khorassan province.

The Plain of Jajarm

The region of north Khorassan is delimited by the Gurganrud River to the west and Tajan River to the east with the Kopet Dag-Hazar Masjed and the Ala Dag-Binalud mountain ranges to the north and south respectively (Anonymous 2005: ixx-xx). The most important plains and intermountain valleys of the region are as follows: Darreh Gaz Plain, Kashaf Roud Valley, Jolge-ye Serakhs, Atrak Valley, plain of Juvain, Isfarayin plain and the Jajarm Plain. The *Kavir* and the Jughatay Mountains to the south and the Aladaq mountain ranges, a continuation of the Elburz system, to the north delimit the last three plains. Loose stones and sand, gradually merging into fertile soil on the hillsides to the north, cover the uppermost parts of the Kavir, known as *Dasht*. Where fresh water can be held, oases have existed from prehistoric times, marking the ancient caravan routes.

The extreme west of north Khorassan Province¹ is formed by a series of mountains and intermountain valleys with an arid to semi-arid climate to the south and north respectively. The most important population centre of the area has formed in the Jajarm plain, which lies roughly between Sabzavar, Shahroud and the Gurgan Plain (Pl. 1). In the north lie the Ala

¹ In 2004 the Greater Khorassan was divided into three smaller provinces of northern, southern and Razavi Khorassan.

Dag mountain ranges and the western extension of the Atrak valley. In the south lies the *Kavir*.

The plain of Jajarm is for the most part dry and barren and the pattern of settlements in it tends to hug the base of the surrounding mountains. Population centres of the area have generally been formed at the end of the alluvial fans. Due to the scanty rainfall, the lack of water supply and aridity of the climate, this area has never boasted a large city. But because of its geographical position it has naturally formed throughout its history a channel for east-west traffic, to which the town of Jajarm owes its medieval reputation. In pre-Mongol times Jajarm is clearly stated to have been a frontier borough on the road to Gurgan from Nishapur, and the emporium of Gurgan as well as Qumis and Nishapur (Spooner 1965: 101). The plain therefore carried the commerce of three provinces, which met in Jajarm, and the whole eastern part of the plain despite its barren character naturally prospered by this. However, due to the havoc brought by the Turcomans in the mid to late nineteenth century as well as the pattern of motor road development in the last quarter century, the entire plain has become suddenly isolated from the main arteries of communication and Jajarm had dwindled to a small town. During the past two decades, when the Jajarm alumina plant began commercial operation, the town received more attention and retrieved a part of its former focal position in the plain.

The town of Jajarm is situated at around 930 asl with sparse mountain ranges rising to 2164 m. The low precipitation average of the area and scarcity of water supplies caused agriculture to be highly dependent upon irrigation. The only major, perennial watercourse of the plain of Jajarm is Kal-e Shur which for the most part of the year is slow, meagre and hopelessly salt and useless. It originates from several small feeder streams in the mountains to the west and south of the Isfarayin Plain and flows east, towards south of the Jajarm Plain, where it merges into another branch of the same name that comes from *Kalāte-hā* (or a group of small villages) in the extreme west of Shahrud Township. Then it turns south and aims straight for the *Dasht-i Kavir*, cutting a deep ravine with a treacherous salt crust stretching to five hundred meters on either side of it. Apart from a system of *qanats* and deep wells, mainly in the northern parts of the plain, the only fresh water source is a spring some 6 km to the north-west of the town, at the foot of an isolated outcrop on which *Qal'eh-i Jalālu'd- Din*² is situated.

² Some 6 km to the north-west of Jajarm, midway to Garmeh is a stone fortress crowning a round, rather high isolated lime-stone rock which overlooks the Jajarm plain. The

Archaeological sites are mainly located to the south of the town. The more south we proceed, the earlier sites we encounter. In the southern part of the present town, which was once the central part, is a large, artificial mound surmounted by the ruins of a mud-brick fortress. Historical evidence shows that the fortress dates back at least to the late fourteenth century (Clavijo, tr. Markham 1859: 104), and photographic evidence shows that the fort was still in use in the Qajar period. M. Mousavi has conducted excavations here in 1990, but unfortunately the field report has remained unpublished³.

Some 500 meters south of the town is a large low mound, which is locally called as *Tappeh Haydaran*. Examination of surface pottery suggests that the mound has mainly been occupied during Bronze and Iron Ages and presence of a few glazed sherds on the surface perhaps is an indication of Islamic squatter layers. Further south, another prehistoric site lies near the desert fringe and will be discussed in this article. The site is locally known as *Tappeh Pahlavan* and it is the most important prehistoric settlement in the Jajarm Plain. It has several times been referred to in archaeological publications (Spooner 1965: 99; Masuda 1975: 66; Labbaf 1992/1371; Dyson 2002: 125; 2008). Yet, the site has never been fully discussed and the published information is very scanty and vague⁴. So, it

exact date of the fort is unclear, but it is locally known as *Qal'eh-i Jalālu'd-Din*, which could be related to Jalalu'd-Din of Khwarezmshah (7th cent. A.H.).

³ Five trenches were opened around and on top of the mound, of which not one touched sterile soil. Based on ceramic finds, however, M. Mousavi believes that the earliest settlement of the site dates back to the late Sassanian-early Islamic period, and that the site was considerably occupied between the 6-8th centuries A.H. (pers. comm.).

⁴ From Spooner's description (1965: 99) of Tepe Pahlavan as 'a long low mound stretches about two kilometers in an east-west direction...and yield *mostly Islamic pottery* [*Italics mine*]' and its location 'about three-quarters of a mile to the south of Jajarm' it seems to me that he has just mingled his information from Tepe Pahlavan with Tepe Heydaran, another large site, approximately two meters high with Bronze and Iron Age gray-black pottery and Islamic sherds, some 500 meters to the south of Jajarm. In his article, Spooner writes in the same paragraph 'further south, and approximately two-and-a-half miles from the town lies another mound of a more interesting nature: for it gives the appearance of a small high mound with a fortification wall, and a large proportion of its pottery is painted, Chalcolithic, ...the second is completely without vegetation and surrounded only by the sparest desert scrub...'. Everything in this latter description including the distance of the site from the town of Jajarm, its geographical location in the desert, the general plan of the site with a perimeter, fortified wall, and finally scatters of painted pottery over the site conforms to reality in Tepe Pahlavan. Masuda (1975: 66) also wrongly located Tepe Pahlavan '4 km. south-east of Jajarm'. Dyson (2008) gives some reliable information about the site but every time (2002: 125, 134; 2008) refers to Jajarm with an orthographic mistake (Jarjarm).

is time to present a full description of the site and open a new discussion about the prehistory of North Khorassan province based on a recent field survey in a crucial point of the region, i.e. the northern fringes of the Great Central Desert.

The site

Tepe Pahlavan is the earliest site amongst an important group of prehistoric sites which have been located during our general surveys along the Kal-e Shur River to the south of Jajarm and Isfarayin Townships. The purpose of these reconnaissance visits, which were conducted from May to December 2006, was to locate and occasionally register prominent archaeological sites in the list of the "Iran National Heritage". In the meanwhile, it was our aim to find out if in prehistoric times the Kal-e Shur Basin was associated with the piedmont zone of southern Turkmenistan or with the central plateau of Iran and the Gurgan plain.

Tepe Pahlavan is located about 4 kms to the southwest of Jajarm, on the edge of a saline ground which slopes away very gently towards the Kal-e Shur at an elevation of 930 asl, $56^{\circ} 22' 198''$ N and $36^{\circ} 55' 294''$ E (Pl. 1). The Kal-e Shur River flows from the north-east of the plain, having collected all drainages of the area, going towards the south to fade in the *Kavir*.

The site consists of a high central mound that rises about 14 meters above the plain and is surrounded by a fortification wall, covering an area of 2.5 hectares (Fig. 1, Pl. 2). Perhaps, because of this perimeter wall the site has sometimes been referred to as *Qala'eh Pahlavan* (the heroes' citadel). The fortification wall has a circular plan around which twelve towers, possibly round in section are constructed in regular spaces (approx. 40 m).

Except for a gully on the south-east of the perimeter wall the sites' fortification is almost intact and can be fully exposed by excavation. Taking into account the clay building material on the one hand and the crumbling effects of desert showery rainfalls on the other hand, which caused the upper levels of the central mound and fortification wall to be washed out, it is very difficult to distinguish the exact place of the entrance(s) of the settlement. During past decades a seasonal sheepcote only used during winter, has been built over the site, leaning against the south slope of the central mound.

Local farmers destroyed a major part of the northern and western sides of the mound. On the eastern part of the site, somewhere between the central



Fig. 1. contour map of Tepe Pahlavan

mound and the perimeter wall, three pits have been dug illegally of which the two first are rather small square pits possibly dug by the sheepcote owner for storing fodder for flocks. The third and the biggest one is a two by three square, about 2 meters deep. Remains of a brick wall with plaster mortar can be seen at the bottom of the pit, running along the west section in a north-south direction (Pl. 3). The bricks used in the wall are measuring $25 \times 25 \times 5$ cm. The wall seems to be part of a small room and is buried at least beneath 1 meter of loose soil, clearly washed out of the central mound and the surrounding walls. It is interesting that the topography of this

interim section and the north-east part of the site, between the perimeter wall and the central mound, clearly shows some buried architecture probably of the same type as encountered at the bottom of the illegal pit.

Analysis of surface finds and field observation indicates that the central mound and perhaps the encircling fortification wall are related to prehistoric phases of settlement in the site⁵ while the interim architectural remains, that is the buried brick walls, belong to an Islamic settlement. Occurrence of Islamic sherds with black paint under blue glaze and tile fragments around the illegal pits, as well as the dimensions of the bricks of the wall at the bottom of the large pit suggest a date concurring with the Ilkhanid period. Presence of Islamic brick walls beneath the courtyard level indicates that the prehistoric material found on the surface of the court has been washed out of the upper slopes of the central mound and that the earlier phases of the prehistoric occupation might possibly be present in the lower levels of the mound.

Pottery

A total of 80 potsherds was collected from the surface of the site of which 18 pieces are Islamic plain buff and blue glazed sherds of the Ilkhanid Period (Fig. 4); the remainder are Neolithic and Chalcolithic painted red potsherds. Sherds and other surface finds were mainly collected in a non-systematic fashion and were photographed and drawn.

The prehistoric pottery of Tepe Pahlavan is generally handmade, either plain pinkish cream and brown-red or decorated with simple geometric patterns in black or dark brown. This group of pottery can be divided into five types based on surface treatment and manufacturing techniques:

Type 1 is a plain, pinkish cream to red pottery. On two examples a stripe of dark colour runs along the edge of the rim. These are handmade, chaff-tempered sherds with a medium to thick body thickness. The colour of the surface and core does not correspond. Surface of the sherds is cov-

⁵ It is interesting to note that similar fortified settlements with encircling wall and round towers have been encountered in the middle Chalcolithic period in Central Asia, e.g. Yalangach-depe, Geoksyur, Mullali-depe, and etc. (Daniel 1972: 65-69). At Tepe Pahlavan the location of the central mound right at the centre of the encircling wall and the use of clay/mud as building material in the fortification instead of bricks incline us to accept the perimeter wall as prehistoric. However, we confess that in the absence of detailed evidence attributing the perimeter wall to a prehistoric period is far from a certainty.

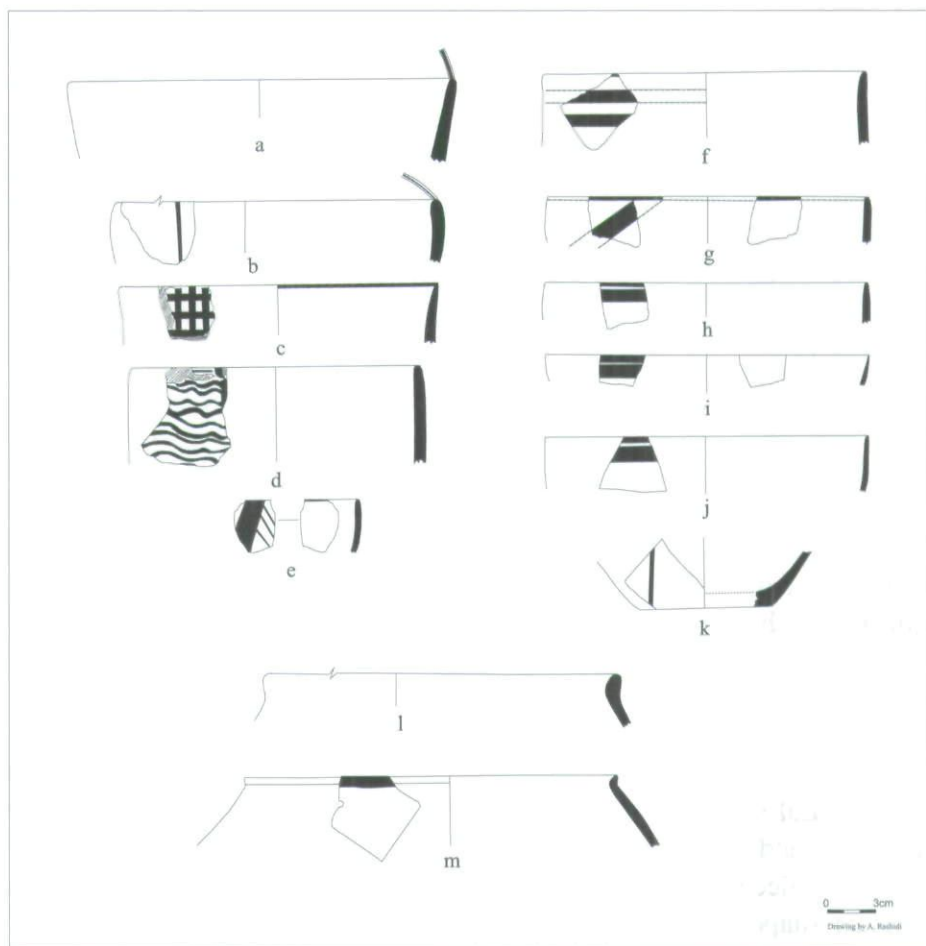


Fig. 2. Tepe Pahlavan pottery vessels.

ered with a pinkish to red slip that is sometimes polished. The sherds are very small and except to a plain deep bowl no other form can be reconstructed (Fig. 2: a, b). This type is datable to the Neolithic period.

Type 2 which is similar to the so called 'Zagheh Type' ware in the Gurgan Plain (Shahmirzadi and Nokandeh 2001: 89-93) is a medium, handmade, straw-tempered sherd with a cream to light brown slip decorated with simple geometric patterns. The sherds are generally decorated with a horizontal band of diagonal lines of red or dark-brown paint on the exterior (Fig. 3: h-n). One example has its two sides decorated: simple

diagonal bands on the exterior and undulated horizontal lines limited by two lines on the interior (Fig. 3: n). Another example has a reticulated design on the exterior and a thin band round the rim on the interior (Fig. 2: c). The latter is the only recognizable form and belongs to a concave sided bowl. Most of these pieces are paralleled in the earliest occupational level of Aq Tepe in the Gorgan Plain (Shahmirzadi and Nokandeh 2001, Pl. 4, nos. 5-10; Pl. 5, nos. 1-6) and are dateable to the Neolithic period.

Type 3 which can be classified as 'Cheshmeh Ali' type is a very fine, handmade, well levigated, straw-tempered, and very well fired sherd with a smoothed or highly burnished surface. The colour of the surface is orange toning to red, while the core is often light gray or pinkish. Decorations are painted in brown ranging to black and motifs on the thinnest pieces are drawn in very fine lines. The thinnest pieces have a body thickness from less than 0.3 to 0.5 cm. and produce a 'clink' when struck. Rivet holes can be seen on some pieces. The most diagnostic examples are cup-shaped bowls painted on the exterior usually with two parallel bands around the rim (Fig. 2: h-j). This type of pottery apparently followed Djeitun ware in north-eastern Iranian sites (Dyson 1991: 268) and has been dated to Transitional Chalcolithic, 5500-4700 B.C. on the Central Plateau (Fazeli, Potts and Wong 2005: 8-9).

Type 4 is a handmade, well-fired, straw-tempered sherd, sometimes with natural sand inclusions. These sherds have a medium to thin body thickness, and the thinnest pieces are tempered with very fine chaff. All the sherds are decorated with black or dark-brown geometric designs such as a ladder-shaped pattern and reticulated designs on the exterior side only. Most sherds are washed with a red-brown slip that in some pieces tends to flake off. Some examples are burnished on the interior, others are polished on the exterior. Except for one small piece that is part of a flat-base vessel, no form can be reconstructed (Fig. 3: a-g). This type of potsherds belongs to the Chalcolithic period.

Type 5 is a fine, hard, well-fired, sand tempered sherd with red-brown colour. In one example the exterior side has a thin, buff slip. Traces of horizontal striations on the interior of some pieces possibly indicate the use of a slow wheel. Motifs are drawn with black or dark-brown colour on the exterior and consisted of simple parallel lines, sometimes separated by a row of dots (Fig. 3: o, p). The buff-slipped sherd is decorated with black wavy lines bound with simple vertical lines (Fig. 3: w). Perhaps, this is a local type and can be attributed to the end of the Chalcolithic period.

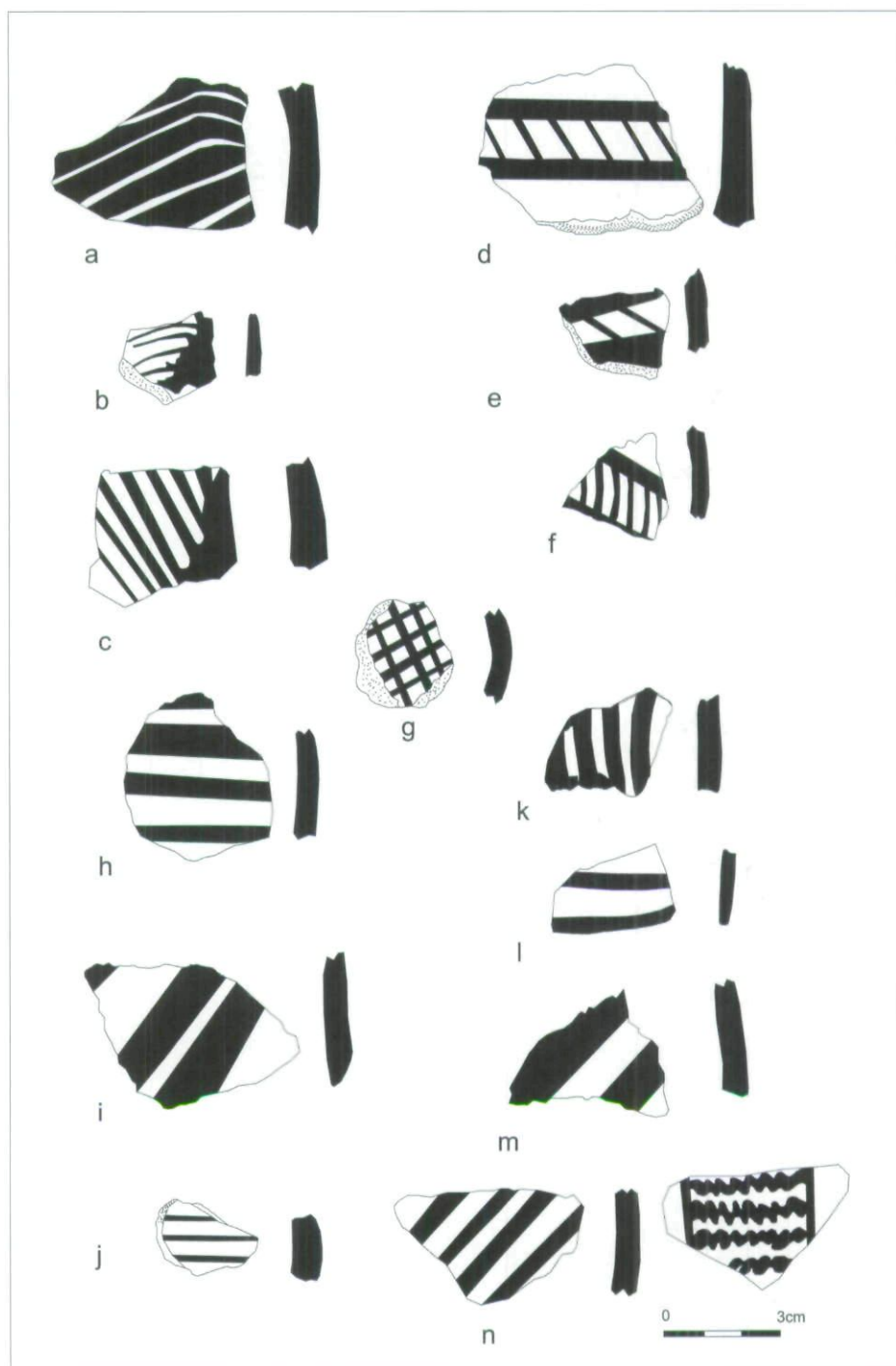


Fig. 3. Potsherds from Tepe Pahlavan (continued).

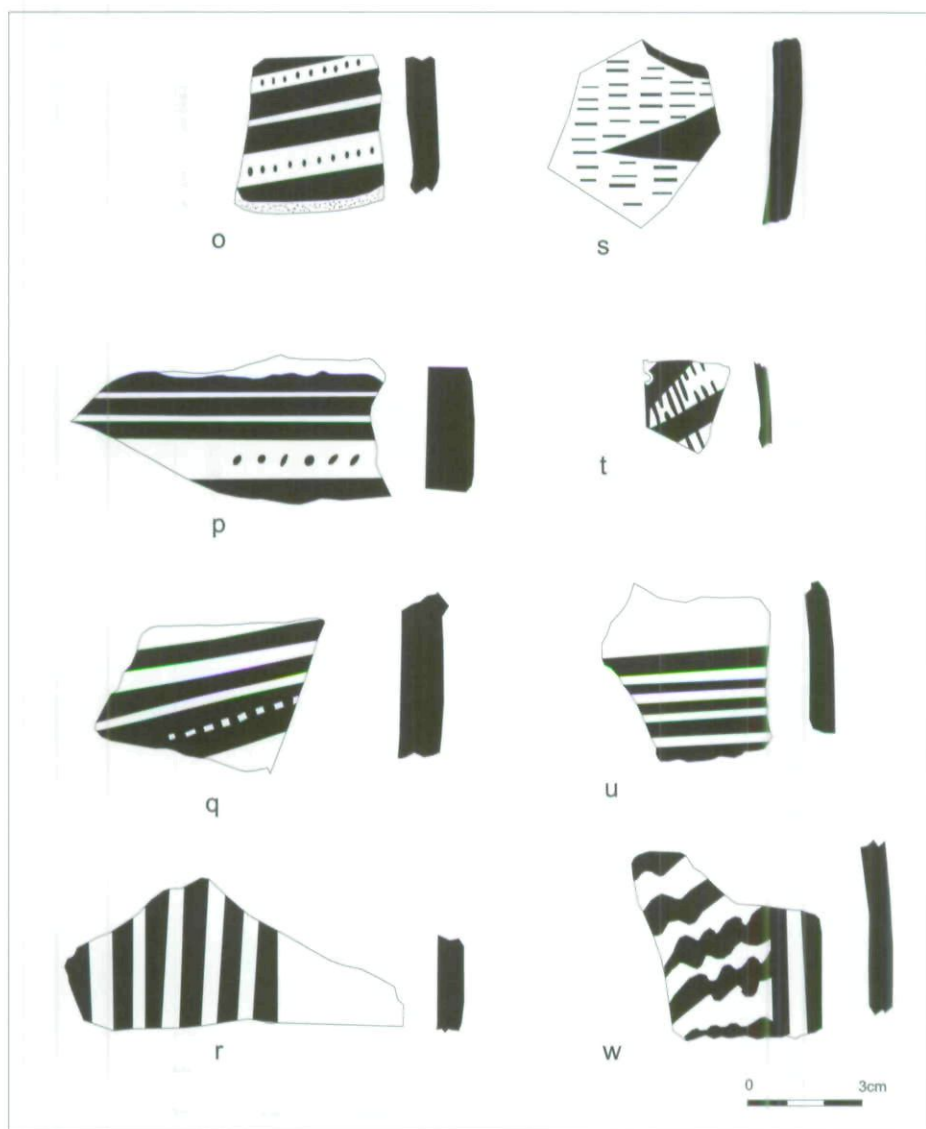


Fig. 3. Potsherds from Tepe Pahlavan.

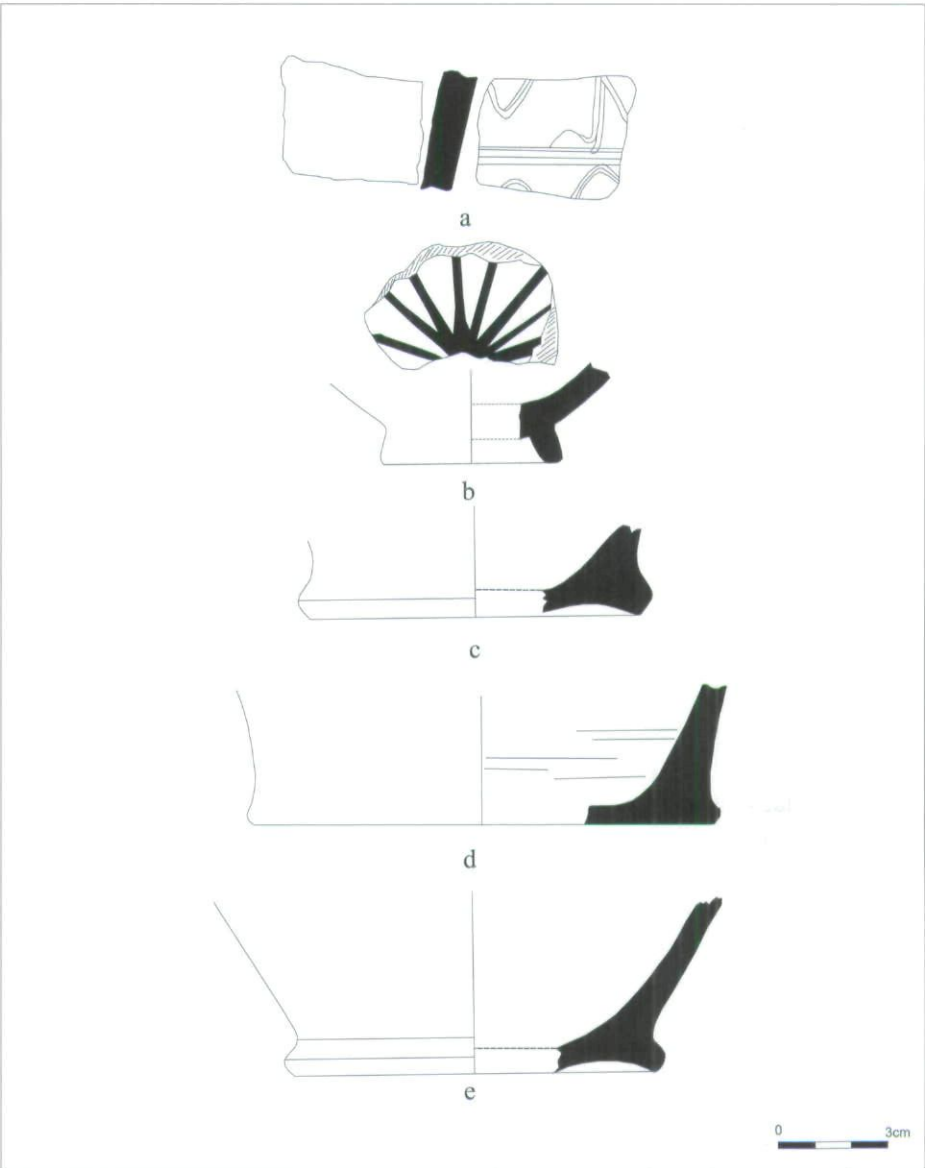


Fig. 4. Islamic potsherds from Tepe Pahlavan.

Lithics

An invaluable lithic assemblage including stone tools, implements, and débitage as well as a good number of stone disk-shaped beads were collected from the surface of the site. The stone assemblage comprises 115 pieces made of fine-grained chert, mostly typical for the Neolithic period. The colours range from light-brown (84%) through red (11%), and gray (4%), to white (one example). Amongst the many stone tools and implements collected from the surface of the site we may cite flint drills, scrapers, sickle blades, and plenty of microliths characteristic of the Neolithic period (Fig. 5; Pl. 5-6). A bagful of raw material and débitage including blade cores, core tablets, crest blades, flakes, and rectangular core flakes were recovered as well.

Blade cores (Fig. 5: a-i; Pl. 5) have always a striking platform at one end produced by removal of core tablet. Among these 4 pieces are rectangular core flakes, and 13 pieces are bullet-shaped blade cores, showing scars from microblades struck around the entire perimeter. On some pieces, however, the cortex from the original surface of the nodule is still visible (Fig. 5: d). Core tablets usually are in the form of flakes removed during the preparation of a blade core to provide a striking platform or in the form of faceted flakes removed from used bladelet cores in order to renew a platform that had become too battered.

Here, we must add that in Tepe Pahlavan the ratio of débitage and raw materials to stone tools and implements is extremely high indicating that production of stone tools took place at the site.

Beads

In addition to the lithic tools and implements a handful of semi-worked and finished stone beads were also collected from the surface of the site⁶. The majority of beads are disk-shaped with a small, central perforation (Fig. 6; Pl. 8) and very similar to stone beads of the Hissar I period (Schmidt 1937: 61, Pl. XIX). Like Hissar stone beads, these are made of serpentine and gypsum that is available to the south-west of Jajarm and the

⁶ Great quantities of such stone beads (both semi-worked and finished examples) were observed on the surface of the site. Since the material, form and dimension of these stone beads were the same we choose a limited number for illustration.

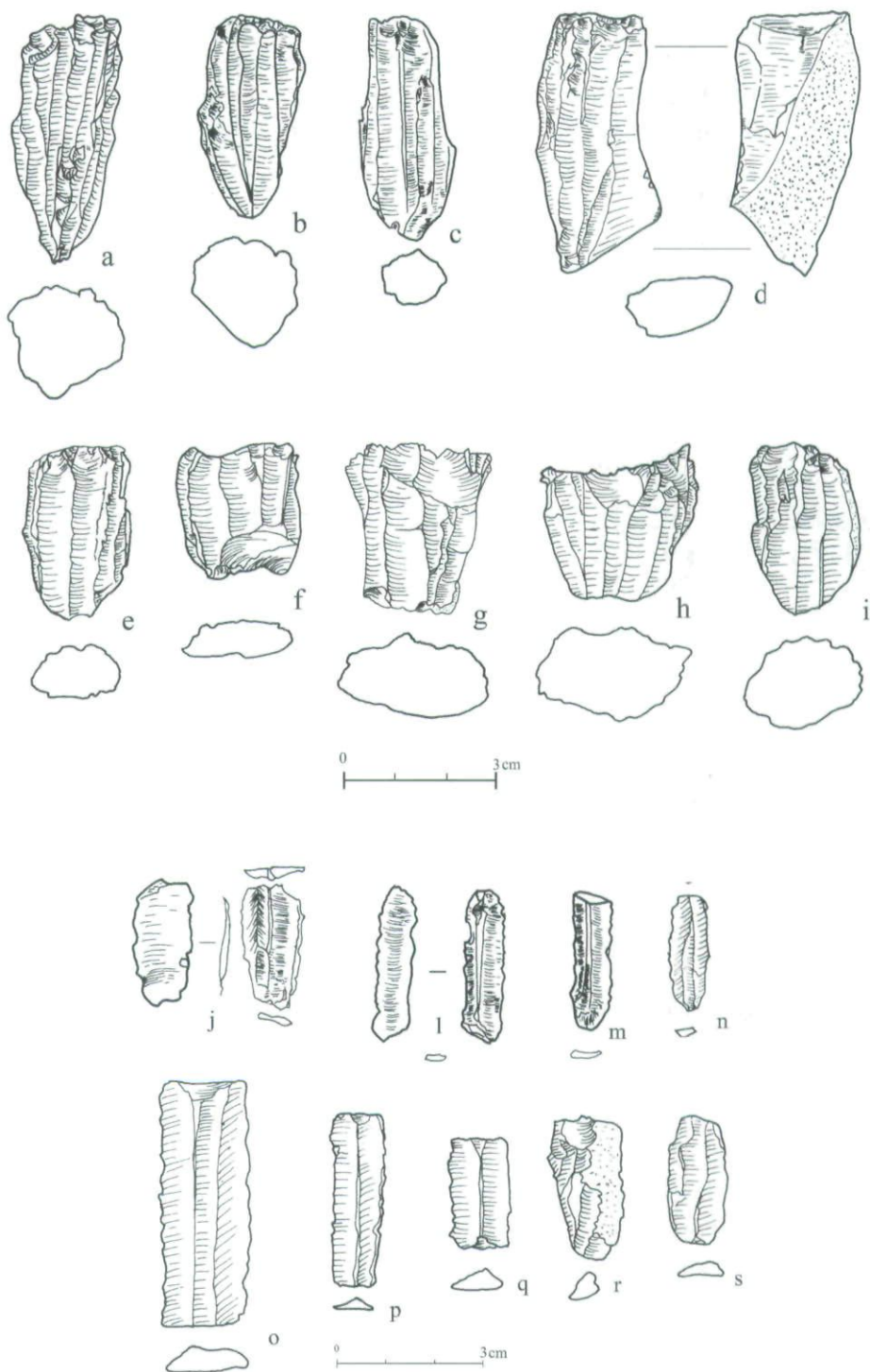


Fig. 5. Blade cores, sickle blades and microliths from Tepe Pahlavan.

neighboring Sabzavar region. Great quantities of chipped or sheet-like pieces of serpentine and many gypsum blocks were observed over the site surface (Pl. 10). Stone beads of Tepe Pahlavan are typically the same in form and dimensions, usually with a body diameter of 0.4 cm., a perforation diameter 0.1-0.2 cm., and height 0.2 cm. Semi-worked, un-perforated examples usually have a body diameter of 0.6 cm., and less than 0.2 cm. height. Only two bone and shell beads (broken) and a copper bead were found on the surface of the site (Pl. 9). The copper bead is made of a thin strip, curled to take the shape of a bead.

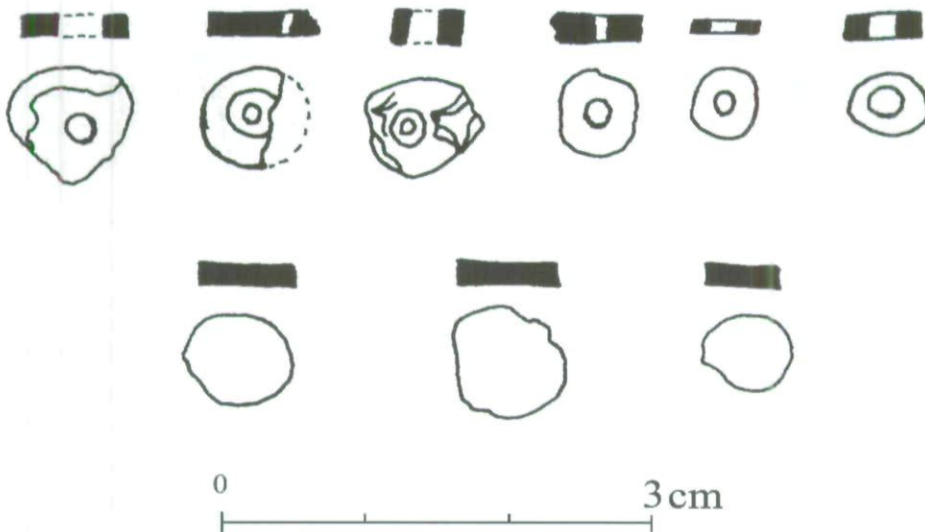


Fig. 6. Finished and semi-worked stone beads from Tepe Pahlavan

As noted above, a large number of thin, sheet-like pieces of serpentine and gypsum blocks are scattered over the site and were obviously used as raw material for bead making. Presence of such pieces beside great quantities of semi-worked and finished beads as well as various types of flint tools and implements including flint drills implies the presence of a highly specialized mining and processing system at the site. Although we have no contextual evidence for bead-making, the work process can hypothetically

be reconstructed: the raw material was divided into blocks with flint tools using a specific technique of carving and pressure. Those blocks were then divided further into smaller pieces to produce the disk-shape beads. After polishing and final shaping of the beads flint drills were used to create the perforations. On some pieces the drilling was done before the final shaping of the beads, probably because of the risk of breaking the bead (Fig. 5; Pl. 8).

Conclusions

The material collected from the surface of Tepe Pahlavan indicates that the site was occupied from the Neolithic period probably until the end of the Chalcolithic period and was then much more associated with the central plateau of Iran and the Gurgan Plain than with the piedmont zone of south Turkmenistan. After the initial abandonment of the site there is no evidence of reoccupation until the Ilkhanid period, when the plain of Jajarm was intensively populated and the town itself flourished. Frequent references to Jajarm in historical sources of the Islamic Medieval Age as well as numerous Mongol coins from Jajarm, sometimes in gold, indicate the prosperity of the town in the Ilkhanid period. After this phase of occupation, the site has apparently been deserted up to the present time⁷.

As for the prehistoric remains of the site, the general plan of Tepe Pahlavan with an encircling wall and round towers, shows that the whole settlement could have been surrounded by a defensive wall. This wall implies that the inhabitants had to protect themselves from possible attacks. Based on evidence gathered through a surface survey of the site it may be reasonable to conclude that the settlers of the site have probably been a group of craftsmen who had accumulated enough wealth to tempt invaders. Presence of a large amount of blade cores, stone tools and débitage, luxury and ornamental items such as copper, bone, shell and various finished and semi-worked stone beads support this idea.

⁷ Mongol coins from Jajarm are quite numerous, but unfortunately few have been published so far. Some gold examples have recently been displayed in an exhibition at the National Museum of Iran (see *Catalogue of the Selective Exhibition of the Golden and Silver Objects in the N.M.I.*, Tehran, 2004). More examples are published in the *Catalogue of the Oriental Coins in the British Museum*, by Lane Poole, vol. VI: 66,101.

The high extent and variety of raw material, either for production of stone tools and implements or for making beads, as well as a series of semi-worked beads and the high amount of production debris indicates to various craft activities in Tepe Pahlavan including at least bead-making, flint-chipping, and possibly other stone industries. The high extent of produced materials seems to have been well beyond the immediate needs of the local population. Therefore, it seems that in Tepe Pahlavan we are dealing with a production site that was likely related to the exploitation and processing of local resources. The strategic position of the site on an important east-west trading route between Damghan to the west and Nishapur to the east should also be considered in any interpretation of the site. Moving west along the 'Great Khorassan Road' from Jajarm towards Damghan, a large number of prehistoric sites have been discovered around Shahrud (Sang-i-Chakhmaq, Emad-oddin, Golmohammad, Khourian, Siah Tepe, Tall-e Khakestar, Parro, Deh Khayeir, Elikae, and etc.) (Rezvani 1999/1378: 7-19). Likewise, at least, sixteen prehistoric sites have recently been encountered during our general surveys to the south of Jajarm and Isfarayin, on the north fringe of the *Kavir* and along the Kal-e Shur River (Pl. 1): the large Chalcolithic-Bronze Age site of Chalo near Sankhast, Touy (Late Bronze Age, Yaz I and Parthian), Anjerli tepes (Bronze Age and Yaz I), Tepe Qamari, Ardin sites (Namazga V/VI), Tepe Qabrestan and Nanvay Tepe (Chalcolithic) to the south face of Kuh-e Shah Jahan are amongst these newly discovered sites, most of which produced potsherds that can be correlated to ceramic traditions of Central Asia. One can assume that these series of sites link to Nishapur and Sabzevar prehistoric sites to the east and constitute a network that must have played a role in the trans-shipment of merchandise from east to west. In future, systematic surveys and excavations in the area will provide answers to old questions regarding the east-west contacts and the nature of interactions between Iran and Central Asia.

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Pl. 2. Panoramic view of Tepe Pahlavan, view from south (photo by the author).



Pl. 3. Remains of Islamic brick wall revealed at the bottom of an illegal pit (photo by the author).



Pl. 4. Examples of stone tools from Tepe Pahlavan.



Pl. 5. Examples of bullet-shaped blade cores and rectangular core flakes.



Pl. 6. Examples of microliths and sickle blades.



Pl. 7. Examples of flakes and truncated microliths from Tepe Pahlavan.



Pl. 8. Finished and semi-worked stone beads, together with a core sample.



Pl. 9. Copper, shell, and bone beads found on the surface of Tepe Pahlavan.



Pl. 10. Examples of various stones used as raw material for bead making in Tepe Pahlavan.

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